

BRAC CLEANUP TEAM

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AUGUST MEETING MINUTES

AUGUST 4 THROUGH 6, 1997

CONCURRED: December 10, 1997

Defense Distribution Depot Memphis, Tennessee

Meeting Minutes BRAC Cleanup Team BRAC and Screening Sites Data Evaluation Workshop August 4 through 6, 1997

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MEETING MINUTES BASE CLEANUP TEAM BRAC AND SCREENING SITES DATA EVALUATION WORKSHOP August 4 through 6, 1997

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| | | |

Abbreviations

| GU = Greg Underberg | DS = Dann Spariosu | GK = Glenn Kaden |
|---------------------|------------------------|---------------------|
| JE = Jordan English | TT = Terry Templeton | SP = Shawn Phillips |
| JS = Julian Savage | JD = Julett Denton | SB = Scott Bradley |
| PC = Pat Cline | VM = Vijaya Mylavarapu | DC = Denise Cooper |

Acronyms

| ASAP | as soon as possible |
|--------|---|
| BCT | BRAC Cleanup Team |
| BRÁC | Base Realignment and Closure |
| RBC | Risk Based Criteria |
| UCL95 | 95% Upper Confidence Limit |
| μg | microgram |
| mg | milligram |
| kg | kilogram |
| ng | nanogram |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CEHNC | U.S. Army Corps of Engineers, Huntsville. |
| PCB | polychlorinated biphenyl |
| PRE | Preliminary Risk Evaluation |
| TBD | to be determined |
| FOSL | Finding of Suitability to Lease |

Summary of Conclusions

- The following determinations were made regarding priority buildings and sites at DDMT.
 - Site 35, Building S308, does not require further assessment.
 - Site 51, Lake Danielson Outlet Storm Water Drainage Ditch, requires risk assessment for benzo(a)pyrene and dieldrin.
 - Site 48, Building 274 Cafeteria, is a priority site that is a candidate for early removal of PCB contaminated surface soils.
 - Building 649 is suitable for leasing.
 - Building 630 is suitable for leasing.
 - Building 639 is suitable for leasing.
 - Building 835 is suitable for leasing under an industrial scenario.
- 2) The pesticide dieldrin was detected in a number of surface soil samples, primarily in the eastern two-thirds of the DDMT main installation, at concentrations exceeding both residential and industrial risk-based criteria. Additional risk assessment of dieldrin involving calculation of site-specific action levels will be necessary.
- Arsenic was also detected in a number of surface soil samples at concentrations exceeding residential and industrial risk-based criteria.
- 4) Subsurface soils will be evaluated against soil to groundwater transfer criteria after delineating the potential impacts on groundwater. The criteria are low and evaluation against them could result in remediation of subsurface soils because of potential groundwater impacts when such impacts may not be observed in the groundwater and soil remediation is thereby not warranted.
- 5) BRAC Parcel 3 is in need of additional surface soil sampling to complete characterization needed for lease to the <u>City of Memphis</u>. Eight soil samples will be taken around the softball diamond and playground areas.
- 6) A Preliminary Risk Evaluation will be performed following EPA guidance for property transfer or lease. The PRE will be calculated on a sample-by-sample basis and the results will be mapped for all samples in the combined BRAC, Screening Sites, and RI datasets. The risks will also be calculated on a site-by-site basis. The site-specific concentration of each parameter will be based on both the site-specific maximum and the UCL95 concentrations. Risk calculations will be reported for both concentrations so a subjective evaluation can be performed on the reasonableness of the site-specific representative concentration. The number of detections and number of analyses will be reported in the PRE tables.

Two PRE calculations will be generated: one comparing the dieldrin concentrations to the RBC and the other using the DDMT-specific dieldrin criteria developed in item 2 above. Since dieldrin is widespread at elevated levels, this is necessary to

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determine the overall risk impact of the DDMT-specific dieldrin criteria. Samplespecific risk mapping will also be done with both the RBC and DDMT-specific dieldrin criteria.

The PRE results will be included in updates to the BRAC, Screening Site, and RI Reports. A brief, stand-alone technical memorandum will be prepared that discusses the PRE methodology. The dieldrin and arsenic maps of risk in the main installation will also be presented as part of this document.

 Screening criteria were developed for parameters that were frequently detected at elevated concentrations. These criteria are reported in the following table.

| Surface Soil Screening Criteria Accepted by the BCT | | | | |
|---|--------------------|-----------------------|--|--|
| Parameter | Screening Value | Basis | | |
| Arsenic | 20 mg/kg | Background Range | | |
| Aluminum | 24,000 mg/kg | Twice Background Mean | | |
| Benzo(a)pyrene | 0.088 | Residential RBC | | |
| Beryllium | 1.1 mg/kg | Twice Background Mean | | |
| Chromium | 39 mg/kg | Residential RBC | | |
| Manganese | 1,300 mg/kg | Twice Background Mean | | |
| Iron | 37,000 mg/kg | Twice Background Mean | | |
| Dioxin | 10 ng/kg | Background UCL95 | | |
| Antimony | 7 mg/kg | Twice Background Mean | | |
| PAH | Parameter Specific | Residential RBC | | |
| Lead | 400 mg/kg | CERCLA | | |
| РСВ | 0.083 mg/kg | Residential RBC | | |
| Chlordane | 0.049 mg/kg | Residential RBC | | |
| Zinc | 23,000 mg/kg | Residential RBC | | |

Action Items

| Action Items from BRAC and Screening Sites Data Evaluation Workshop | | | |
|---|-------------------|----------|--|
| Action Item | Responsible Party | Date | |
| Site 48, Building 274 Cafeteria: include | CEHNC | TBD | |
| confirmation sampling for PCBs in subcontractor's | | | |
| scope of work for removal of surface soils. | | | |
| Establish contractual mechanism to perform soil | CEHNC/CH2M HILL | ASAP | |
| sampling at BRAC Parcel 3. | <u> </u> | | |
| Contract for dieldrin risk assessment | CEHNC/CH2M HILL | ASAP | |
| Incorporate PRE scope into Delivery Order 9, RI | CEHINC | ASAP | |
| Report, and issue modified RFP for PRE and | | | |
| database consolidation. | | <u> </u> | |

Meeting Transcript

2) Site 35 (Building 308)

GU: In summary for Site 35 we evaluated the following [surface soil] constituents that were of concern: lead, nickel, zinc, beryllium, and arsenic. We determined that for the lead concentrations the maximum of 33.8 [mg/kg] was below the residential risk criteria of 200 [mg/kg], nickel was also below the residential risk criteria and close to background. Nickel value maximum was 33 [mg/kg] and the background is 30 [mg/kg]. Zinc concentrations are also below RBC [Risk-Based Criteria]. The maximum arsenic value of 17.3 [mg/kg] exceeds the background arsenic value of 16.5 [mg/kg], however the average arsenic values are below background. Therefore arsenic was not considered to be a contaminant of concern.

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IE: The background was not anomalous.

GU: Right.

DS: Just an additional reason and again my feeling was the arsenic was clearly part of the background population and the population of the samples taken on the base fit within that background population so it was not a contaminant.

GU: Okay.

GU: We also discussed beryllium. And determined that the beryllium value of 0.95 [mg/kg] was less than twice the background value which was 1.1 [mg/kg].

JE: That is correct.

GU: Anything else on Site 35?

JD: Don 't include that we're going to put wells in right away because that is something that will have to be negotiated.

GU: After reviewing these data we have determined that surface soils at Site 35 do not require further assessment at this time.

JE: That is correct.

DS: Agreed. I would say that Site 35 in lieu of the contaminants of potential concern (dieldrin) need to be carried further in the risk assessment process and we can consider this a transferrable clean site.

Subsurface Soil Criteria

GU: We also discussed subsurface soils and we determined at this point we need to link the groundwater concentrations for constituents of concern with the subsurface concentrations since the only criteria are subsurface groundwater protection criteria. At this time we are not going to be evaluating them against the groundwater criteria until it was determined there was an impact on groundwater.

SP: That is our remedial investigation activity.

GU: That's right. Now what are we going to say about whether we have adequate well coverage.

JE: Well we don't yet.

JD: But there's no indication that we need to do something right now.

DS: Not for the purposes of this meeting now.

GU: Well, no. I guess the other issue is, are we going to be chasing groundwater? How do I know that I don't have a groundwater problem if I don't have adequate wells?

DS: Well, my opinion on that is there's going to be more groundwater chasing because there are contaminants above MCL underneath the main installation. Eventually there will be more groundwater data.

JE: The bottom line is that we have so much inference in our groundwater information in the main installation that I can't feel comfortable with it. We need to have more control then we've got. So those additional wells would bring greater comfort for the contaminants that we know we've got. The potentiometric surface would give us the information about whether we've got a groundwater problem or not, say metals or anything else that is now under study.

Site 51-Lake Danielson Outlet Stornwater Drainage Ditch

GU: Okay. This is the summary for Site 51. We had iron at less than half of background. We had lead well below background. Magnesium and manganese are also below background. Nickel does exceed background but it's also below the residential criteria. Manganese exceeds residential criteria but is below background -- that's based on a soil background value that included 22 detections for manganese so it's a solid background value. Benzo(a)pyrene exceeded the industrial RBC and is below background. However, the background concentration is based on a non-parametric distribution which included a maximum value of 0.96 mg/kg.

SP: Greg-you said benzo(a)pyrene exceeded the industrial RBC, it did not. It exceeded the residential RBC.

GU: Okay, my mistake. Benzo(a)pyrene exceeded the residential, not the industrial. However, there is not much confidence in the background value that was used. Therefore, we will go ahead with a risk assessment based on that benzo(a)pyrene exceedance as well as the dieldrin exceedance associated with the site. Beryllium is similar concentration to background values. This is all for surface soil. For surface water, we had arsenic exceeding a low ambient water quality criteria; however, it is an order of magnitude below background value so arsenic will not be considered a contaminant of concern. A ditch is also onsite – the sediment DDD does not exceed background, but does exceed the NOAA value and is not considered significant. Any other comments?

DS: I would add to the logic on the sediment value for arsenic is that there is no threat to human health and the only question involved is ecologic risk. I just don't think that the sediment environment in the drainage ditch presents any ecology that needs protection.

SP: .We do not believe that ditch provides any ecologic habitat.

GU: That ditch is concrete lined.

SP: It is concrete lined and predominantly dry.

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GU: Our final recommendation for Site 51 is that we are going to carry through the risk assessment only for surface soils for benzo(a)pyrene and dieldrin.

JE: Was there any subsurface information?

GU: We did not look at subsurface information.

TT: We're not doing beryllium? We are not carrying beryllium?

GU: That's correct because it's similar to the background value. Again, we're not looking at the subsurface soil because of the groundwater transfer issue.

Arsenic Background Value

GU: The carcinogenic health-risk value is 0.43 ug/kg. The recommended value from this table is 23.3 [ug/kg], which is also a non-carcerogenic value. Based on the distribution of arsenic both onsite and within the background data, there would appear to be a break in the population distribution near the value of 20 ug/kg. This 20 is associated with a background distribution — the three highest values in the background distribution are 19.1, 20.8, and 27.7 ug/kg. The value of 27.7 [ug/kg] was removed as an outlier. The value of 20.8 [ug/kg] was truncated. The statistics indicate that the range of the background values is up to 20.8 [ug/kg]. We will use 20 [ug/kg] as a criteria based on background as a cutoff.

DS: Maybe to put it a little bit differently and looking at it from the EPA's perspective from CH2M HILL's plot of rank order versus concentration, it's quite clear that any arsenic concentration in the screening or BRAC sites up to about 20 mg/kg is clearly part of the background distribution the same distribution as the background. Eventually I think statistical tests will demonstrate that above 20 gets a little "ropey" because there aren't that many background samples above that level and I don't think we can clearly demonstrate that any arsenic value above 20 mg/kgs is part of the background population. Therefore that's why I think that's a good cutoff value for screening arsenic levels.

SP: Dan, would you like to say anything about the validity of the carcinogenic RBCs of .43?

DS: It's 0.43. It's the obvious screening level that we use in Region 4 for arsenic so our whole argument on raising arsenic to screening criteria of 20 mg/kg is based on background. It is not any shift in what we are using for the risk-based concentration suite. We're just using regional background.

JE: TDEC agrees.

Aluminum Criteria

GU: Regarding the aluminum criteria, we decided to go with twice the background value which is 24,000 mg/kg. This is because aluminum is a common compound in the soil, and the data we have onsite is not significantly different than the background distribution.

Beryllium Criteria

PC: There are several sites with beryllium above the residential screening criteria. Only one with the highest concentration of 1.6 mg/kg is slightly above the background concentration of 1.1 mg/kg which is 2 times the mean background so that the decision is to use the background criteria for screening for beryllium, because it's a regional background issue.

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JE: TDEC concurs.

DS: Yeah, we went over the background data for beryllium criteria and background is a good number.

Chromium Criteria

GU: We have decided to use the RBC to health-based criteria for chromium. The basis is because the background is below it.

SP: Residential is based on hexavalent chromium which is a conservative health risk approach.

DS: We're confident that any level of concentration of chromium below 39 ppm (the residential RBC) is not a health risk in any way. It is protective.

Manganese Criteria

SP: Manganese value with a background of 1300 ppm and one-tenth the residential screering is 180. So the actual residential RBC is 1800 with our background being 1300 we're choosing a more conservative value which is the background. Screening criteria for manganese will be background of 1300 ppm.

JE: That is correct.

Iron Criteria

PC: As along as we're doing that a background of iron is 37,000 mg/kg. The screening number for the risk based residential screening is 2300 mg/kg.

SP: We have a background of 37,000 mg/kg. We have residential RBC of 2300.

Group discussion

DS: Was anything above background?

PC: 2 values and 1 was 66,154 of 5 or 6 percent iron.

JD: Were they on the same sites?

PC: Oh, I'm sorry those are parcels. Sites 56 and 83.

Group discussion

JE: I don't see a need to evaluate iron.

JD: I concur.

Group discussion

DS: It's not a significant contaminant.

DS: I'm glad there are only two otherwise I'd say this is ridiculous.

SP: Screening criteria for iron exceedances is the background for the region which is 37,000 ppm.

JE: I concur.

Group discussion

Dioxin Criteria

GU: The constituent of concern right now is dioxin.

PC: Let's discuss the potential applicability of the EPA value of 1 ppb in use of screening.

JE: We will try to ascertain the use of that value this afternoon. Just for information our twice background criteria is 10 parts per trillion and our residential RBC was 4.1 parts per trillion. We had about 10 or 12 samples that exceeded the twice background criteria. Yet we are still going to evaluate the EPA value. The rule of thumb is 1 part per billion as a screening criteria. We will revisit this contaminant and make a decision later.

GU: Dioxin in surface soil. EPA has recommended using a screening value of 1 ppb.

DS: Wrong. For screening and risk assessment purposes we recommend the higher of either background or the human health taken from the RBC tables. The standard accepted cleanup levels for remediation goals for dioxin is 1 ppb. So the risk assessment should not be performed for those values below background on the RBC tables since the remediation goal would turn out to be less than'1 ppb.

DS: Scientific data shows that there's no protection of human health caused by cleaning up to the lower levels.

GU: We have consistent dioxin detections in surface soil in all 22 background samples. We have a solid background value for it.

DS: So the decision for screening purposes is that we will use 2 times background mean.

Group discussion

SP: The background value that is in the table is 10 parts per trillion for surface soil. I don't know if that has already been doubled.

GU: It is based on the 95 percent upper confidence limit on a lognormal distribution. So background is not quite the mean. Background is based on the UCL 95 for lognormal distribution.

Antimony Criteria

GU: The criteria for antimony is 7 mg/kg, which is based on twice the mean background concentration of 3.5 mg/kg. The mean background concentration is based on 1 detection out of 22 in surface soil.

JE: And I'd say that is pretty conservative.

PAH Criteria

DS: We wanted to establish an objective screening criteria for benzo(a)pyrene. I feel like the population and background is not very good. It's not a very good thing, plus with the benzo(a)pyrene even with the background samples you're not really sure whether this is a region wide thing or a hotspot in the background. Therefore, the only number that we could have any much faith in showing the screening criteria is the residential RBC which is 0.088 mg/kg. I guess I don't have anything else to say about that.

JE: TDEC agrees.

GU: One more time on PAHs. We are using the residential risk-based criteria for PAHs because background concentrations are based on a low number of detects, the values are sporatic and they are not representative of background. So we will go ahead and use the risk-based RBC.

JE: TDEC concurs.

SP: EPA concurs.

Lead Criteria

GU: 400 mg/kg is the screening criteria for lead.

JD: I thought the RBC as 200.

SP: It might be. The cleanup goal is 400 so let's go ahead and screen it all that. That's the only contaminant EPA has CERCLA cleanup guides for. So let's go ahead accept that number.

 $J\!E$: And that's residential cleanup.

GU: So our screening criteria for lead will be the residential cleanup value of 400 mg/kgs in surface soil.

JE: That's probably one of the best decisions we've made all day.

Group discussion

Cadmium Criteria

DS: No risk assessment for cadmium. It was not necessary. The reason being that it's right there within the range of background and well below the RBC and in the range of 1/10 RBC and was only seen at 3 different sites in just a few samples so there's no need to worry about cadmium in surface soil.

PCB Criteria

SP: There are three different PCB RBCs here. Well there's the general one and then there's two carcinogenic effects.

JE: I'm not sure but I think the other two are used for general purpose.

Group discussion

JE: Now do we want to go as far as to break it down into the PCB isomers.

GU: The data was all reported as Aroclor 1260.

SP: And to do the different cogener analysis is pretty extensive analysis. It's not worth it. Might as well look at the most toxic one.

DS: That's the way it was analyzed so it was all analyzed as Aroclor 1260. It will drop out of the risk assessment. We can use the background value.

Group Discussion

SP: The RBC residential for the general PCB is 0.083 ppm and that's a carcinogenic affect. The value of 0.319, I don't know where this came from. That might be some other standard or something. Maybe that's one of the older numbers that CH2M HILL didn't catch when they went through.

JE: It makes me feel like we ought to go back and spot check our RBCs.

SP: I've been checking them. Thats the first one I've seen that was different.

GU: We were going to use the values for Aroclor-1260 concentration of 0.083 mg/kgs residential and 0.74 mg/kg industrial. These would be used as the screening values in surface soils.

JE: We're not distinguishing between industrial and residential, are we?

GU: No. But we will be screening against the residential criteria, and we need to update the table for both residential and industrial criteria.

Chlordane Criteria

GU: For both gamma and alpha chlordane we will use the residential RBC value as the screening value.

Zinc Criteria

GU: There are only two zinc detections above residential RBC criteria. Residential RBC will be used as the screening criteria since the background value is well below residential RBC.

DS: I just want to add that one of the reasons that we want to maintain that for zinc is that here at Site 83 it looks like it contributes to a whole bunch of metals. The only place it's found is this facility.

GU: Above residential RBC, yes.

DS: Well in any event this is a sandblast area and there seems to be an abundance of contamination of metals so we don't want to drop zinc out of the risk calculations. It also looks like just as a side note, Site 83 could be a candidate for removal. It looks like the metals will give a hazard quotient of greater than one even for industrial reuse scenairo.

Site 48-Building 274 Cafeteria

SP: Site 48, which is Building 274, the cafeteria, is a potential early removal site due to PCBs. Three PCB hits out of five exceed the residential RBCs, the highest being 1.4 ppm. Also dieldrin which exceeds three samples residential RBC. All the samples are surface soil samples. The likely action is going to be a shallow soil removal and backfill and clean material and reestablishing the grass cover.

DS: I'd like to add that this is one of the highest priority sites for reuse by the State Technical Institute.

SP: Upon completion of removal action I'm sure we will put into the contractor's scope to do confirmation sampling and we'll have him look particularly for pesticides and PCBs, which are our two concerns.

JE: You mean after you fill in backfill?

SP: No before you fill. At the bottom of your excavation.

JE: Why?

SP: To have numbers plug back into the RI process again.

Group Discussion

JE: We know we're probably going to have similar levels at depths as we have at the surface and even hotter maybe. What good is it to know that? We're going to cover it with clean material.

SP: Well, right now, do you think the 1.4 ppb is going to go through risk assessment and result in anything other than no further action?

JE: No, so why do it? We're performing a remedy basis; we're not just doing a removal. We're actually filling and providing established grass cover and that's going to be the remedy. And that grass cover will have to be maintained and that's going to have to be written into the lease or deed that's going to be done.

SP: Possibly even the warning tape placed beneath the clean fill for future construction workers.

PC: Are we talking about Building 274? That would be written into any lease and/or purchase document, we could write that in. Glen, that comment you made earlier about the FOSL, this is what needs to go in.

SP: But are we saying that after digging this 12 inches and the appropriate real estate contingencies, this site could be ROD'ed with no further action? If you don't want us to take samples, then that's...

JE: I think the samples are going to be collected and they are probably going to wind up being to some degree somewhat relatively hot. Are we going to do anything else?

Group Discussion

DS: You really think so?

JE: I was under the impression that we thought the PCBs were there as a result of the excavation to build a building and that as such those PCBs we see at the surface may actually be diluted soils from depth. Meaning if we go deeper, we are probably going to get hotter. Let's remove the veneer on top that represents a direct contact risk, replace it with clean fill, and let that be it.

DS: At some point you have to demonstrate there's no risk.

JE: Well you do that by sampling your cover after its established. I would say.

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DS: We need to make sure we're getting clean fill. You may want to sample the fill before you even let it touch the ground. We don't want to inherit someone's problems.

JE: You may want to do that prior to excavation so that your excavation won't fill up with water while you're waiting for results.

JE: That sounds like a plan and a wrap on this thing.

GU: Site 48 is a removal candidate.

BRAC Parcel 3 Field Sampling

GU: We are discussing sampling at BRAC Parcel 3, we have discussed locating a couple of samples in the low part of the play area between the swing and the pool. One sample from the upper portion of this area and a composite sample from all the bare areas by the swings, etc. I discussed another sampling effort at the baseball diamond, one composite sample from the diamond itself and a composite sample from the outfield. Baseball diamond sampling should consist of a composite sample from soil within the diamond itself and a composite sample from soil within the diamond itself and a composite sample from soil within the diamond itself and a composite from the outfield.

Building 649

GU: We are discussing Building 649 located in the center of the facility. We have discussed two sample points associated with that building. A surface soil sample on the western margin of the building C102 and a boring in the southern portion of the building SB70F. Constituents of concern at C102 are pesticides; dieldrin, DDT, and DDE. It would appear that these pesticides are part of the general pesticide application as they are within the range of the pesticides throughout the eastern portion of the surface soil on the main installation. All subsurface soil concentrations from samples 3 to 5 feet below surface and 8 to 10 feet below surface were below background or risk based criteria. So we have determined that the site is a candidate for lease.

Group Discussion

DS: I would like to point out for the record, dieldrin is well above the industrial RBC.

Building 630

GU: Building 630 has associated with it a BRAC sampling location C11.2 in the northwest corner. The closest screening site sample was SS46D taken next to the railroad tracks approximately 100 feet west of the building. The only constituents of concern here are again dieldrin and other pesticides. Same issue as Building 649. Pesticides appear to be part of the distribution in the eastern areas. Suitable for lease. The building was identified as a CERFA category 3 which indicates that it is available for lease. The samples were taken after the determination was made, so there has been a predetermination that the building can be leased.

DS: Suitable for lease.

Group Discussion

Pesticide Application

JE: I would like to know how other installations handle these types of problems [referring to elevated dieldrin levels in surface soils] because I know they have had them. I'd like to know what happened, what the outcome was.

GK: At Homestead AFB, if the pesticides were there as the result of proper application, they didn't care what the number was.

DS: How do you know that it was there due to proper application?

SP: Because the operators were sent to the proper classes.

GK: That's right. They were military people who were trained in precision application.

DS: And I believe it was probably done more carefully here than it would have out in the general populace. On the other hand, it was done a lot more often here. I mean, if its a serious health risk? If it were a little bit above, then I could buy that argument, but when it's way above...

JE: There is a point where the toxicology overwhelms whatever protocol was used for proper application.

Building 629

GU: There was no sampling around this building. This building is contained within BRAC Parcel 12. It is presumed because the BRAC sampling points around Parcel 12 contain dieldrin above industrial criteria that there will be a similar exterior dieldrin problem associated with Site 629. But 629 is suitable for lease.

Building 835

GU: With regard to Building 835, there is no data, no BRAC, or screening site data immediately associated with this building. However, it is a newer building, built in 1985. The samples for both BRAC and Screening Sites that are in Parcel 32 do not indicate significant elevated levels of dieldrin. So the dieldrin concentrations expected around Building 835 would be low.

DS: There are other samples in the parcel but not associated with 835 that are right on the border line for our screening values for arsenic and PAHs. However, Building 835 itself has been sampled and that was clean. That building is probably suitable for transfer for industrial reuse easily.

Sitewide PRE

SP: What we have been talking about is an RI caliber exercise. It might be preliminary to the RI but we have to recognize that's not under contract. From the BRAC, screening site, and the RI fieldwork (the data reports we already have), there may be ways that Julian can have CH2M HILL do this work under that with some remaining funds, but I don't know and that's up to Julian.

J.D: Some of the stuff is clearly outside the scope of work.

DS: But to me here's where fast track comes in. I would say fine, just an NPL site. Wait for the RI and make the decisions based on the information that comes through from that. But any preliminary information you can get to address this obvious dieldrin problem and maybe arsenic since they are kind of a basewide thing and affect a whole lot of parcels is going to help me declare if there can be a no further action decision. At least say that this site is a transferrable site. In the interest of fasttrack, I don't care if it's an official formal Superfund document or any kind of data synthesis that is going to help me to give me some comfort that there is not a major health issue at a given site. This allows me to say, "Great. Put it in the transferable column." It's a BRAC issue, not only an RI.

GU: One thing I was thinking of as your were talking earlier is a way to get this information out would be to essentially do these across site issues for dieldrin and arsenic and package them in a standalone TM format again, issue that with another set of tables that would have the PRE numbers and put those into the existing screening site and BRAC parcel letter reports. So amend the tables that are in there with the risk assessment tables and add a section that would be a discussion of the risk associated with that site.

DS: I hear three things. (1) Use the screening criteria that we have agreed on here these last couple days to resort the data, (2) we need to assemble a table with the contaminants of potential concern which is what comes out of that screening, and (3) PREs site by site.

GU: How do we want that rolled up?

DS: Group them by parcel.

GU: We've got two things we're trying to establish. (1) If the screening sites that are part of the CERCLA program need to be graduated into the RI, and (2) looking at the data across the BRAC parcel, what are the risks for BRAC leasing?

JE: I think we need to remember that our BRAC sampling procedure was designed to pick up where screening left off. So in a sense all screening sampling is also part of the BRAC process as well.

GU: Screening is really a subset of the BRAC in that sense.

JE: And it will eventually be a subset of the RI if it makes it that far.

SB: Dan, let me get a clarification on one thing, you say you want a table that has PREs for contaminants of concern after the screening process and we're really talking about the contaminants and sites of concern after we've gone through the things we've been talking abut the last two days.

DS: Right, No, no. You only do it for the ones that exceed the screening levels.

SB: I just wanted to make sure I understood that correctly. I guess there is no harm in running PREs on the sites we have already discussed.

SP: Dan, you had three points. The first one was reformat the letter reports, conduct the PREs...

DS: ...and the third was to synthesize the risk evaluation where we turn Vijaya or Pat loose.

SP: Is that specific to arsenic and dieldrin?

DS: Yes, it is because there is nothing else. Really, all we've got are a few isolated hits of PAHs and there is no point in doing it for that.

SP: And that synthesized risk assessment could be made part of a TM format

GU: Yes. I thought at one point we discussed doing a big picture risk map. Do the PRE for all the carcinogens and all the non-carcinogens and come up with two numbers-two maps...non-carcinogens and carcinogens map. So we would add it and look across all contaminants, and I guess we'd do it for every sample location.

DS: That's especially appropriate for metals.

GU: So that would be part of the maps. The big picture risk TM would include those series of maps plus individual maps for dieldrin and arsenic.

JE: I don't see how carcinogen is going to look any different from the dieldrin map but if it does...

DS: So the dieldrin and the arsenic would just be specific.

JE: When you're doing arsenic you might as well throw in. Some sites with high arsenic concentrations with other metals so it makes sense to treat the metals all at once.

VM: The only outstanding metal would be lead.

DS: I didn't think we had that much lead.

GU: I thought we said that our lead was awfully close to background.

JE: We're using 400 for our screening value.

DS: What about RI sites, do we need to roll those in too (to the risk assessment)?

CU: That's what I was getting at with the BRAC. You're really looking at the risk associated with the parcel you'd have to look at all the data.

DS: Yeah, right. I'd like to see it all in that form.

SP: Getting back to that concept we had back in January or February about having a unified data report. This is similar to that it's just a unified risk map, looking at the cumulative risk from all the parcels.

TT: It is parcel by parcel and the only way to integrate and synthesize that is to have all contaminants from all sampling displayed and analyzed parcel by parcel.

SB: Am I mistaken or doesn't that back us to where we were a few days ago. I mean if you want to do a reasonably accurate map, certainly there will be those areas [using] the sites we have already identified as being above some criteria, but if you are trying to merge contours you will use all the available data, even if its on those sites that we have said, "Well there is no point in looking at these sites anymore."

GU: Mechanically its a matter of calculating a PRE.

DS: I would hate for it to cloud the facility-wide issues. If it's an isolated site (Site 83) all the metals are real high and it's the sand blasting area, it's very obvious that it needs to have the top 6 or 12 inches of soil removed. You plot that and factor that in with the facility

wide issue about metals, not carcinogens, and its likely to cloud the issue because you're going to have high numbers. I don't know how you're going to synthesize this, but factoring in your contours and all of a sudden peak up you know and stop. Then you end up with these contour lines that say "if you look at this area and it's really away from that site it's going to look higher because you have to equally space the lines in between."

GU: What you could do is actually try to krige (contour using statistical techniques) it, determine how correlated the risk is.

DS: It's going to show some risks on some sites that we have dismissed. We haven't dismissed the sites.

JE: Sites that we have developed a screening process that will dismiss them and yet when we look at the information from strictly objective risk certainly there's going to be those PAHs that we said were attributable to the facility here.

DS: I don't think so because they are already going to be screened out and not be considered. Nothing will be considered that is already screened out.

VM: Actually I think that's a good point that Scott made. If you are plotting everything, and the risk happens to be less than 10[°], it would still show up on the maps with the risk level pretty low. That could be the only situation.

DS: Screening criteria is based on 10°.

JE: If you're going to do a contour map you've got to utilize all the information that you've got in order to have some legitimate contours instead of artificial ones.

Group Discussion

GU: I'd like to clear exactly what it is we're going to turnaround. I understand we're going to do the maps for risk assessment. Two across all constituents and one for the dieldrin and one for the arsenic. We're going to do the PRE on essentially all sample points at all sites.

SP: And add that to your data table from your site letter report draft.

GU: Right. Here's my question. If we're going to do that on a screening site by screening site basis because we have to make that determination. How are we going to package the BRAC? Are the BRAC reports going to be all data? Right now they just consist of the BRAC sample data which doesn't seem to make much sense. It's isolated.

JE: Why can we not incorporate it with the screening data?

GU: Not just the screening data there's also the RI data.

JE: I understand that but do it by parcel.

GU: You can do that.

JE: By parcel packages, that's the way stuff is going to be transferred and in most cases that's were risk is going to be a different scenario. I mean several parcels might have the same industrial type scenario but there might be some that are going to be different.

VM: So if we do them by parcel we will not have sites anymore or will that be a separate issue?

JE: No. It would be a site within a parcel report.

JD: We're still going to have to have sites for the RI. That's where we are accountable.

SP: You have RI sampling document, letter reports from different parcels, for example, parcel 34 and within it you have Site No. 27, the only RI site within that parcel. You can take the different letter reports and I don't see why not have the BRAC, screening, and RI data within each letter report, but still have it identified as separate sites. You've already done that.

GU: We would basically call it a parcel report. It would tabulate all of the data. It would be blind to the type of site to which the data belong. We would tag it to which site it belongs to— so we would know which one was a RI and which one isn't, but we not going to try to distinguish the risk associated with a particular RI site. It just becomes part of that parcel blend. Then we have a separate set of letter reports strictly for the screening sites because we need to deal with them under CERCLA and determine whether they need to be under the RIs.

JD: No. I disagree.

DS: Wouldn't that fall out anyway because we looking a the risk at each parcel.

JD: Our screening site reports are comparable under the CERCLA process and we have to keep it there so we can find out where it is. You may have to have a separate parcel report that integrates all the data, but we need the screening data.

GU: The way it is now, the screening sites would be a stand alone report from this parcel report.

General Discussion

VM: Yes, because you're going to have to redo the screening site report.

DS: I think that's a good idea.

VM: We didn't get the screening site report we expected. That has to be redone.

JS: Are we talking about a whole new thing?

JD: The BCT wants a new delivery order for the parcel. Basically most of the RI work will be done, it's just basically putting the data together.

JS: Well what about the RI report then?

GK: Well in other words we're pushing it back if we are going to redo the screening and then we're talking about a new BRAC report, the RI report is going to be pushed back which will push back the risk assessment.

JD: You know that this is going to mess up the risk assessment because just two people, Pat and Vijaya, are working on it. The BCT will have to understand.

JS: Well, let it be known that everything will be pushed back.

DS: This is not a major project.

JS: It's a contract mechanism though.

JD: No, it's not a contract mechanism. You must realize that there's just so many people and so many hours in the day. That's the problem.

JE: Let CH2M HILL tell us what they can do.

GU: You and I, Pat, need to discuss what we can do.

DS: If you can do a full blown RI in the next two months maybe we could go ahead instead of pushing that back but I was getting the impression that was going to take longer.

GU: The full blown risk assessment would take longer.

DS: You're right. What I'm saying is if we can't eliminate a lot of the sites going through the full risk assessment process, then maybe Glen is right, just stay on track and do the RI and wait until that's done before we include the synthesis in the RI with the baseline risk assessment. My idea was that a preliminary risk evaluation would allow us to pull sites out of the CERCLA process sooner. But, if the State wants the full risk assessment anyhow on a site where PRE gives you a 10⁴ risk, then we might as well go ahead and get that on track.

SP: Before you answer that Glen, I need to ask Dan something that I didn't understand. You said the PRE is going to still go back to RBC for contaminants specific and then accumulate the risk.

DS: That's what a PRE is.

SP: If what we've done in the last two days is to look at each and every contaminant on this site and throw out those that are below our screening values the majority of our screening values are already at the residential RBC. The exceptions are arsenic, and a couple of metals. If it's already that, then is the PRE going to throw out anything that we haven't already thrown out and could it not in fact bring sites back in?

DS: No. It gives you a risk number and it gives you an industrial risk number and a residential risk number. Obviously if you're above the screening levels the PRE is going to give you a number above 10⁶. So if you're prepared to look at the cumulative risk and it's still under 10⁵ and you look at that and are able to be comfortable with saying that we don't need any remediation here, the site is okay to transfer, this is an acceptable risk. Its then out of the process

SP: You're willing to do that but I don't think unless dieldrin or arsenic are resolved...

DS: I don't have a hard line saying that, for example, I'm going to accept 3x10⁺ and not 5x10⁺.

. JE: I think we'll be somewhat comfortable with accepting 10^s if on a PRE basis if we feel comfortable that a full blown risk assessment would provide no additional value.

DS: I can't think of any situation where a full blown risk assessment would give you a higher risk number.

JE: I'm saying that 10⁴ issue is equivalent to the risk of one in a hundred thousand deaths.

DS: Not really, because the PRE is so conservative.

JE: And that's were we are going to have to know on a particular basis or any particular situation whether we had a good comfort that that was so conservative that would be the case. I feel fairly comfortable, but felt like we were a little conservative with the PRE level that gave us 10^s, especially mid-to-low 10^s, I feel fairly comfortable with it. If we are approaching 10^s level and especially if we're approaching at an area where I don't have a great comfort that we are ultra conservative at the PRE level.

DS: My look at this list here. At a number of sites it was a matter of 1 or 2 contaminants so there you're talking low 10^5 , closer to 10^6 , even on a PRE so there is an opportunity to streamline the RI process there.

SP: Well the PRE is going to go back and use the dieldrin and other residential RBCs and industrial RBCs to look at two PREs.

JE: The State is ready to say right now if the Reuse Authority has declared that certain areas are going to be used for whatever industrial purposes, the State is ready to accept that the industrial RBCs are to be used.

DS: On a PRE basis?

JE: Yes.

DS: Well that would really streamline the PRE process.

JE: As long as we all understand that and we're all ready to accept that.

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DS: Because once you get into the RI you've gotta do both residential and industrial.

DS: If you're turning over something based on industrial risk then that requires a deed restriction.

JD: But the deed restriction could be enforced and it would become part of the public record.

JE: It will be part of the public record but those things have a way of being forgotten and lost.

DS: Nobody knows whether they are enforceable or not.

JE: The way the records are done in Shelby County is atrocious. The deed itself doesn't have a notice. It's microfilmed somewhere way unattached, remotely referenced.

DS: It's certainly an acceptable procedure (deed restriction) especially for BRAC sites.

GK: Dan it sounds like your idea will streamline it quite a bit.

DS: Well I think it's an opportunity to move sites from Column A to Column B quicker. Now, is it more total work doing this than in doing an RI?

General Discussion

GU: If it works out that we're dropping sites from the RI consideration at the PRE level it could save some but it's still more effort.

DS: It still probably adds up to a little more.

JE: The payoff is it gets you to a FOSL transfer status much quicker.

DS: Yes. And the other advantage to me is I'm real concerned about this dieldrin thing. Right now I have no idea what to do about this and that doing the earlier process, gives me something to work with a lot sooner than waiting for an RI. Now maybe we can figure out how big a problem this is before the RI comes out, but I kind of doubt it.

JD: The biggest part of RI for us and time consuming part ... because in my mind a large part of this should have been done already...is the risk assessment, either the PRE or the baseline. The risk discussion is still the major part of the work.

DS: We said we wanted a few more samples. It's not a lot, but there are a few holes. I guess we decided we were okay on the background and there wouldn't be much point in chasing more dieldrin in background. It is not going to do us much good but there's a hole in one of these parcels (Parcel 12), there's a playground on the golf course area and the ballfields, and the easement along Perry Street that means about 3 or 4. And again, that's something that has to be done before the RI.

GU: We can get those samples turned around in the lab in about 14 days, not including validation.

General Discussion

JD: But we need to get validation in there.

GU: Yes, but typically within 21 days for analysis.

JD: Now the biggest thing is time. Now you're talking about plugging in the data gaps. We still see another month and it's not our contracting process. The lab and data validation...so we still see at least a month for the lab time.

GK: Like Dan is saying, is that going to make it easier down the road? Is that the best way to go to spend the time now make it easier later or don't do it and do the RI process sooner? Are we going to end up at the same place at the same time?

DS: There is no point of doing the PRE is if we decide to go directly to the RI because I don't think you can do a PRE and an RI and eliminate a site from risk assessment that fails screening.

GU: No.

DS: Once you get above screening and you're considering the site in the RI that means full blown risk assessment.

GU: So I guess what it boils down to is how fast do you need this PRE comfort. If it is something that is needed- we can spend more money to get the answer quicker, is what it is coming down to.

DS: To a certain extent, I separated BRAC and CERCLA a little bit here in that CERCLA requirements have to be met eventually, but we don't have to have all those ducks lined up before we do a FOST.

GK: What's our value at? How much time are we talking about from here--is it going to make a difference. I understand what you're talking about. You can do it faster and it's

going to cost more money. Is it going to be 2 months faster if we do the full blown risk assessment. What's the difference here? Is it a year? Yes, then we're talking some serious time. Two months-not necessarily.

GU: We're talking about a parcel by parcel risk evaluation. That wasn't the scope of the RI. That was RI site by RI site.

JD: We haven't negotiated that contract with you yet.

GU: My understanding is that our RI was going to be on RI sites plus the screening sites that graduate to RI. Now we're talking about a big thing.

JE: But it could be, we haven't negotiated that yet.

JD: We could do it parcel by parcel but we still have to turn around and let CH2M HILL give us a site for the FFA so that they have to produce another document.

VM: Can I say something about the PRE. As far as using the PRE as a screening tool in place of these tables that we have, I just want to talk a little about the technical issues in both processes. It's essentially the same thing that we have here multiplied by 10⁴ for carcinogens or taking the value as is' for the non-carcinogens. Only thing that will raise your comfort level Jordan, and you may have other studies, we will be using the maximum detection concentration in each data set. To me as a risk assessor who has been doing this for awhile, there isn't another more conservative way of doing it. We take the maximum detection concentration, we're taking the most conservative risk level. I heard Dan mention something about taking a little higher risk level. What I see is that if we were to evaluate it just as we have been, taking every site and comparing every one it's not going to give any additional information other than to put it in risk language. What I also heard you say is that you are going to use that as identifying the NFA sites, those sites that would not require a full blown RI. So that would be the additional advantage of implementing the PRE: identifying those sites that we do not need to carry through the full blown risk assessment.

DS: Screening has been what we have been doing the last two days. It's basically for purposes of what is going to go into RI and baseline risk assessment. So because of that we haven't paid a whole lot of attention to the industrial RBCs. Now if we do a PRE, get a risk number, residential and industrial, at this stage we would be looking at industrial. We've got the reuse plan that says industrial. Then Jordan and I could have some comfort.

SB: These sites up here with the asterisk by them they were okay on the industrial but they busted on the residential.

DS: I would be nice to have the risk language.

VM: Some of them would drop out if we were to raise the risk level to 10⁴ level as you were talking. There won't be any new sites introduced in it. Some of them will drop out if we raise it.

DS: It is a different way of looking at it. It's a way to allow us to eliminate some sites.

GU: Basically instead of saying parameters x, y, and z exceed the industrial criteria we will actually have a number for that particular site.

JD: We have the statement of work written (for the Baseline Risk Assessment and the RI Report), but based on the conversation here we may have to go back and change the language.

GK: But we're not really going to worry about that until we do the PRE which is another delivery order with sampling. Dan, I see where you're going and it sounds like its going to be worthwhile, even if it pushes the RI back.

DS: It will speed up the BRAC process and slow down the CERCLA process.

General Discussion

JS: I think what we will do is take that existing scope for the RI and change it. Put in the PRE, go on and negotiate it. We can have the PRE as the first deliverable. And then we can tailor it such that if we need to go on and do the risk assessment then we could go ahead and do it. As a matter of fact, we'd probably put that risk assessment in as an option.

JD: We have to put language in there and also we have to put another task in there for them to do those additional analytical data that the BCT wants.

GK: How long are you talking roughly about to change the scope? A couple of weeks to get your ideas down on paper.

General Discussion

GK: The field sampling. Julian and I were talking about this and he's going to go back and look at the BRAC RI and the screening the three delivery orders that were to collect data and if there's money there, he might have some discussions with Greg about that sampling, so that might happen fairly quickly while we're still waiting for their reproposal update on that RI scope.

JD: Our biggest problem will be the analytical time. But in that case if Vijaya's going to produce PRE tables for residential RBCs for arsenic, it's going to appear that we have a problem. Now if we run it with the background it will look like nothing. Should we report both in this TM report that CH2M HILL is going to produce.

DS: No, you screen first and you only include sites

JD: You'd really have to explain the screening process up front now

JE: I feel comfortable with what we've done so far in terms with telling the public why we did this. We don't believe that it is a requirement that DLA clean up below background except in cases where the risk is extreme and it's clearly not the case in everything that we have seen.

VM: I have not worked with PRE process in the past. I have a couple of questions for both of you. The RBC values that we used, how flexible is that value? For example, if I were to come up with a site specific RBC value based on the current worker scenario, current golfer scenario, and take the existing industrial value from Region III table at 10° risk level, as you were suggesting, would that be something that is accommodated in this process? And we can discuss about the exposure.

DS: I don't quite understand you. Could you go over that again?

VM: The RBC values that we have in here are extremely conservative and they are straight from the Region III tables at 10^{*} risk levels. There was one discussion earlier we were having about accepting it as slightly higher.

DS: No. That's a decision that we would make on a site by site basis. I wouldn't want to keep the PRE. The whole point in this is to make it as conservative as we are ever going to get. When I look at that number in every case, not being a risk assessor, I can know that the risk assessment will give me a lower number.

VM: What is very hard for me to deal with is if I were to take 10 samples in a given area, and only one sample had a detection, and that happens to be high right now your PRE will kick that site automatically into the RI because I'm taking the maximum concentration and ignoring everything else that's going on.

DS: Isn't that the way the full risk assessment and the RI would work?

VM: You would use UCL95 and have larger number of samples; I would come up with an exposure calculation that is much lower.

SB: Exposure other than UCL 95 calculations, the PRE is an objective ruling. I think that the highest conservative values and the standard default scenarios are going to identify risks in places where there really isn't one.

JE: I think we have to document through the risk assessment process when that occurs, that is my impression.

DS: Right. I don't want to do that kind of filtering yet. Follow the strict PRE guidance.

GU: While we are going through this how difficult will it be to calculate the UCL95 on one of the parcels?

DS: Yes you could put a column on the table with a note that said, for example, only one of ten samples or something like that.

GU: You could just read the averaging data on these parcels, right?

DS: Knowing that the PRE is based (for example) on one hit and nine non-detects would certainly help me make a risk management decision.

VM: I think we all keep going back to the same point of arsenic and dieldrin as site-wide issues. What would be hard is when we do the PRE and everything shows up to be a high risk. That could be difficult for us to make a decision too because of the dieldrin.

JE: It's kind of the way it goes unless some of our research indicates some standard or screening value.

SP: That you use something other than the RBC for dieldrin.

SB: So why do we want this document out there that identifies all these places with risk? I just don't see any reason to put all this down.

VM: It's not true risk per se it's just a screening ratio.

SB: It's just a screening ratio but it goes in the public. It really won't matter what the purpose is and what the defaults are and how much science goes behind defending that this

is really not as true as the full blown risk assessment version. It won't matter. It's going to be a worse number and that's the one we're going to hang on.

JD: You've got a point.

JE: I hadn't thought about that and that's why initially I said maybe we should select site to do PREs on the sites that are closed.

SB: Maybe you should do a PRE on the whole dieldrin and arsenic issue and leave it at that.

SP: I tell you, if we get the dieldrin issue resolved, the list of sites is going to go down.

DS: Not only that, but look at all the sites that we don't have dieldrin. These are the ones I think that are going to fall out of the PRE process.

SP: With the few exceptions, the paint blast area, which are early removal candidates.

DS: Here we're going to add these risks and the risk for industrial screening and the PRE is

GK: That's going to fallout anyway eventually.

DS: Eventually.

SP: But Scott is talking about preventing a situation that is very hard to rectify.

GU: But it's not any different than what we've done here today in concept in that we are using an essentially more sophisticated screening document

JE: It doesn't matter to me how we do this. If we do this with a PRE we have to be upfront with what the PRE is and explain it in as simple terms as possible as being preliminary, makes a lot of assumptions, it is not the final risk evaluation or risk analysis. It is preliminary and it allows us to remove those that are not a problem so that it doesn't cost more money and more time going to the full risk assessment for all of them. I feel a little bit better now because I've gotten the impression we can move risk assessment forward or closer to time to us in order to give us those answers more quickly.

GU: By doing the PRE.

JE: No I thought I'd hear that we were discussing making the risk assessment a little earlier in the RI from a contracting standpoint. Make it one of the earlier deliverables.

JE: Then what is the time difference when we would see the risk assessment vs. the PRE?

SP: From the time you see the PRE, we have to look at it, we have to go through and agree or not agree, it goes back to CH2M HILL. Then they do a risk assessment on , for example, 19 sites instead of 20. Then they start the risk assessment.

GU: The risk assessment is going to slide day by day while this process is occurring.

SP: I think about a 2-month delay or so.

GK: 2 months? Yea, but what's two months?

DS: 2 months to get the PRE done and in a month we can review it in 15 to 30 days.

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JD: Can we do it without the additional data?

JE: Some of it and certainly the data will come in while it's in process.

GK: We're talking a couple of months, but we're going to have sites falling out much sooner this way which is going to make everybody politically very happy.

SB: It's not going to be sites falling out-it's going to be sites that can be more clearly delineated that can be leased but not transferred. What you'll be able to see is which ones can meet industrial criteria in an absolute worse case scenario.

GU: If we're talking about the parcel-by-parcel PRE, we can finish that in draft form for internal review with a month's notice to CH2M HILL.

JD: Could we do a parcel a day?

GK: So you're talking two or three months possibly whether we transfer or not. Politically it's better to say we can lease anything right now, but this is going to speed up the transfer process. That's all the people up here want to hear. It's not a matter whether we transfer them or not, speeding up the process is the issue.

SB: Most of my objection is based on what I thought the objective here was. I guess the objective is to identify transferable properties, not just to reduce the number of sites going to the full-blown risk assessment.

SP: From the EPA and State's perceptive they basically weed out sites from their perspective and get the BRAC issue out of the way earlier, so they can get the real RI caliber sites.

DS: We don't have to do it that way but that meets the President's five point goals.

GK: Julian, I certainly think I can buy into it. How soon you all can do your contracting.

DS: Yea. There are probably as many voices in this community that are just not as loud that think we're going way to slow and would love to see property transferred and industry moved in.

GU: So what's going to come out of this PRE evaluation is going to be a turnaround on the BRAC letter reports that includes a discussion of the risk in that BRAC parcel. There will be a PRE table and a write up describing the interpretation of it. That's the actual product you want to turnaround plus the TM that looks at dieldrin and arsenic.

JD: Will we still need the TM with the PRE?

GU: Yes, because the PRE is not going to look at it site by site.

JS: Is the PRE going to be done on the BRAC sites?

JD: You have to use the RI and screening sites for both. Why can't we address it right there? Why do we want to do another tech memo?

DS: Pat and Vijaya have been saying for the last three days that there's another way of looking at this and while it's not a formal thing like the PRE, it will help us make risk decisions.

JD: You do the write up anyway because I see a TM as just another duplication of effort using the same data.

GU: The PRE is nothing but a bunch of data tables essentially with discussion site by site. This risk map cuts across all sites so we would have to have a chapter or final summary report on it with a reference to the map.

JS: Are we calling the TM all of this information then?

DS: Yea, the PRE is going to have the maps and everything in it.

GU: It's not going to be the size of that background report TM.

JD: As long as it's not 2 separate documents, that's where I'm concerned.

JS: I think Julett is concerned about another large volume.

GU: Let's go back to the arsenic and dieldrin issue. Do we need to look at it globally across the sites, because our hypothesis is that it is uniformally distributed and not site related.

VM: From public perception is it worthwhile to come up with an alternate RBC before we do the PRE evaluation and use that for those particular chemicals.

JE: I think if we can research and understand what has been done that is acceptable as early as possible it's only going to help us. But the question becomes, when does that happen? I'm just looking now to see how evenly distributed dieldrin is.

GU: I guess where I'm going with this is: do we break out these ubiquitous (meaning dieldrin and arsenic) contaminants parcel by parcel and deal with them, particularly dieldrin. We are trying to evaluate the case that dieldrin was applied using acceptable land use application. Do we need to look at it globally to make that case? You loose that if you just went with each individual letter report and talked about dieldrin.

JE: I think for understanding how it might occurred, but I don't think the risks are going to be sitewide. The risks are going to be parcel by parcel. Am I wrong or are we going to have a number of parcels that are going to be all leased to the same people. I'm assuming these parcels were established based on different uses and users.

DS: I thought Vijaya was asking you if she's going to come up with some creative way of looking at the arsenic and the dieldrin if we wanted that dialed in before we do the PRE. In my opinion, no.

GK: I think Scott and I would say if you don't look at it before hand everything comes back from the PRE.

JE: Yea, but if you plug that into the PRE what is the PRE? What does that mean?

DS: Certainly going to give you greater than 10^4 for dieldrin because a lot of these already exceed for dieldrin alone. No cumulative. Dieldrin risks alone are between 10^4 and 10^4 .

DS: Oh sure, I don't expect anything except the dieldrin to jump out.

JE: Here's going to be the tough question. Whatever we come up with, if we research and find out some methodology whereby dieldrin is allowed at a higher level under some scenarios or circumstances, that's going to be the tough thing to put out and have to defend.

I can just tell you right now if they did it at just one base and that's the only place they did it, it's going to be a tough sell. It's just not going to go very well. The only way we can do it globally in terms of explaining it to the public is to say okay what do you do. Dig up the whole base here? Dig up the whole facility? The alternatives are not real good right now. If there's any way we could speed up the research part of understanding--how many other facilities are there where they have had a dieldrin problem. I suspect quite a few. Let's see what's been done and let's not reinvent the wheel.

SP: Take the benefit of that knowledge into account before the PRE process.

DS: The PRE is a very simple straightforward thing. When you see a number from PRE I know exactly what it is. If you have some risk smoothing technique applied before hand or some specifically calculated real site-specific RBC that you are using in the PRE, then all of a sudden I don't know what it is anymore. It involves some review and interpretation. Now, one of the things we might do, and again this goes back to what Scott suggested, we do know that the dieldrin sites are going to fail and most of them are going to come out above the industrial. Maybe we don't include those.

VM: One alternate you can think about is to have two plots actually. Have one with dieldrin and without dieldrin. You can have this number without dieldrin and arsenic and with the dieldrin and arsenic and you can use a combination of both.

JE: You could have it ready whenever you answer the dieldrin question if you're able to . successfully answer the question.

DS: At some time we're going to know what the risk is associated with dieldrin.

JE: The real risk, not something somebody has just done somewhere. Because we need to weigh that against what has been done and what has been accepted and we've got our own particular universe right here that we're going to have to deal with.

DS: "Properly applied" may be a legitimate concept, but it doesn't work when there is too much risk.

JE: I think we need to know not only if there are other places where dieldrin has been a problem. I would like to know the history of how dieldrin was accepted at some higher level, how that process occurred and how much the public was involved with that process and how well they accepted it. And the makeup of that public. I guess I'm being very political here at this point, but it will help us in the long run to make a risk management decision about dieldrin if we had some comfort about where they are with it, where the public was in those certain circumstances. It really is a matter of risk and a matter of perception and we're talking about 1 in 100,000 vs. 1 in a 1,000,000 vs. 1 in 10,000 and it's all in the conservative process of risk assessment.

JE: I think we're going to find out that there are many installations where they just didn't consider it. But I think maybe we're going to find maybe that there might be some process that occurred.

DS: There's a risk to leave dieldrin there which is in orders of magnitude, a higher health risk. Now if we're going to forget dieldrin we might as well forget some of the other stuff.

JE: Absolutely

GU: What if we did as Vijaya suggested, perform the PRE on all constituents except dieldrin using the RBC criteria and dieldrin separately using the same criteria. We also produce another PRE for dieldrin using an alternate criteria as part of this package. That way you could see what the risk is for dieldrin and then we do the grand total risk so you've got all the pieces of data you need to make a decision about dieldrin, but you haven't lost anything in the summation with all other constituents.

JE: And the criteria for dieldrin was "TBD" at this point.

SB: Dan's risk people are going to have to be able to buy into that too.

DS: Or not, whatever.

Group Discussion

GU: I would suggest that our first action would be to look at that dieldrin action level and write it up in a letter and have you guys review it before we start turning the crank on doing the PRE.

JE: Yea, because if it has no merit whatsoever there's not point in putting it out to the public. Then that's where the research from the front end has to come in.

VM: That would include the fate and transport aspects, not just the toxicity aspects but the fate and transport aspects of dieldrin too.

SP: It seems like we found it in the soil but not in the drainageway. The ditch drained that same area.

Site 34, Building 770

GU: Looking at the Site 34 data we determined that there are exceedances above residential criteria for lead, arsenic, and benzo(a)pyrene; benzo(a)pyrene also exceeds the industrial criteria in one surface soil sample. Subsurface soil data does not indicate any exceedances above criteria. The indication is that the site will have to go through a risk assessment, but based on the number of detects and magnitude of the data we would expect it to come through a risk assessment not requiring further assessment. Therefore, the site is suitable for lease with the core industrial purpose only.

DS: It would come through a risk assessment with probably no need for further action in the industrial exposure scenario.

The BRAC Clean-up Team Meeting Minutes from the August 1997 meeting are reviewed and approved for inclusion into the Administrative Record.

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